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10/082,634	02/21/2002	Selena Chan	176/61011 (2-11144-1010)	4466

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EXAMINER

FORMAN, BETTY J

ART UNIT

PAPER NUMBER

1634

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/082,634	CHAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	BJ Forman	1634	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-45 is/are pending in the application.
- 4a) Of the above claim(s) 22-33 and 35-45 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                               | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5/02,8/02</u> | 6) <input type="checkbox"/> Other:  |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-21 and 34, drawn to a biological sensor, classified in class 435, subclass 283.1.
  - II. Claims 22-33, drawn to method of making a biological sensor, classified in class 435, subclass 174.
  - III. Claims 35-45, drawn to a method of detecting a target molecule, classified in class 435, subclass 4.
2. The inventions are distinct, each from the other because of the following reasons:
  - a. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by simply entrapping probes within the porous semiconductor structure.
  - b. Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product can be used in a materially different process i.e. the biological sensor of Invention I can be used to amplify and elute sequences complementary to the probes coupled to the structure.

Art Unit: 1634

c. Inventions II and III are independent and distinct methods. Inventions are independent and distinct if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as capable of use together and they have different modes of operation and different functions. The method of Invention II operates by binding a coupling agent to the semiconductor structure and a probe to the coupling agent and the method functions to provide a biological sensor. In contrast, the method of Invention III operates by exposing a biological sensor to a target molecule and detecting photoluminescence resulting from target binding and the method functions to detect a target molecule.

3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Edwin Merkel on 25 June 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-21 and 34. Affirmation of this election must be made by applicant in replying to this Office action. Claims 22-33 and 35-45 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Art Unit: 1634

6. Claims 1-21 and 34 are under prosecution.

**Information Disclosure Statement**

7. The references listed on the 1449 received 21 May 2002 and 6 August 2002 have been reviewed and considered. Copies of the signed 1449 are enclosed with this action.

Additionally, the copy of the International Search Report filed 21 February 2002 has been reviewed.

***Drawings***

8. drawings are objected to because it is unclear whether 3A is prior art or whether 3A and 3B are both prior art.

Appropriate correction is required. Applicant is reminded that no new matter may be entered into the specification or drawings.

***Claim Rejections - 35 USC § 112***

9 The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-22 and 34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-22 and 34 are indefinite in Claim 1 for the recitation "the one or more probes binding to a target molecule...." because it is unclear whether the recitation is a method step of target binding or whether the recitation is intended to define a characteristic of the probe.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application

Art Unit: 1634

designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claim 1, 6-8, 10-15, 18, 20, 21 and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Ghadiri et al (U.S. Patent No. 6,248,539, filed 30 October 1997).

Regarding Claim 1, Ghadiri et al disclose a biological sensor comprising a porous semiconductor structure comprising a central layer (i.e. etched pores, Column 3, lines 38-67) and each of the upper and lower layers including strata of alternating porosity (i.e. alternating from the central layer, see Fig. 1) and one or more probes coupled to the structure wherein a detectable change occurs in a refractive index upon binding of the probe to the target molecule (Column 4, lines 43-57).

Regarding Claims 6-7, Ghadiri et al disclose the sensor wherein the pores have an average pore size of between 10 and 100nm (Column 3, lines 40-45).

Regarding Claim 8, Ghadiri et al disclose the sensor wherein the probe is a non-polymeric molecule e.g. avidin (Column 2, lines 1-14).

Regarding Claim 10, Ghadiri et al disclose the sensor wherein the probe is a protein (Column 2, lines 1-14).

Regarding Claim 11, Ghadiri et al disclose the sensor wherein the probe is a nucleic acid molecule (Column 2, lines 1-14).

Regarding Claim 12, Ghadiri et al disclose the sensor further comprising a coupling agent for attaching the probe to the semiconductor structure (Example 1, Column 7, line 58-Column 8, line 38).

Regarding Claim 13, Ghadiri et al disclose the sensor wherein the coupling agents are silanes (Example 1, Column 7, line 58-Column 8, line 38).

Regarding Claim 14, Ghadiri et al disclose the silane is selected from the claimed group (Example 1, Column 7, line 58-Column 8, line 38).

Art Unit: 1634

Regarding Claim 15, Ghadiri et al disclose the sensor wherein the probes comprises a plurality of binding sites one which binds to the target (i.e. sequence) and one which binds to the coupling agent (Example 1, Column 7, line 58-Column 8, line 38).

Regarding Claim 18, Ghadiri et al disclose the sensor wherein one or more probes are the same i.e. multiple copies of each probe (Example 1, Column 7, line 58-Column 8, line 38).

Regarding Claim 20, Ghadiri et al disclose the sensor wherein the probes comprise two different probes i.e. DNA-A and DNA-B (Example 1, Column 7, line 58-Column 8, line 38).

Regarding Claim 21, Ghadiri et al disclose the sensor wherein the porous semiconductor structure includes at least two zones, one of the two or more probes being bonded to the porous semiconductor structure within a first zone and another of the two or more probes being bonded to the porous semiconductor structure within a second zone (i.e. the probes are bound to a different silane functional group and therefore to a different zone as claimed, Example 1, Column 7, line 58-Column 8, line 38).

Regarding Claim 34, Ghadiri et al disclose a detection device comprising the sensor of Claim 1 and a source of illumination and a detector (Example 3, Column 8, lines 48-64).

13. Claims 1-7, 11-16, 18-19, 21 and 34 are rejected under 35 U.S.C. 102(a) or (b) as being anticipated by Chan et al (Proceedings of SPIE. 2000, Vol 3912: 23-34).

The following rejection is under 35 U.S.C. 102 (a) or (b) because the reference was supplied by Applicant in an Information Disclosure Statement with a date of 2000 but without the month of publication. Because publications prior to 02/21/2000 would be references under 102(b) and because the cited reference is not identified as being published after



Art Unit: 1634

02/21/2000, the claims are rejected under 102 (a) or (b) pending notification of month of publication.

Chan et al discloses the sensor in the passages cited below.

Regarding Claim 1. A biological sensor comprising: a porous semiconductor structure comprising a central layer interposed between upper and lower layers, each of the upper and lower layers including strata of alternating porosity; and one or more probes coupled to the porous semiconductor structure, the one or more probes binding to a target molecule, whereby a detectable change occurs in a refractive index of the biological sensor upon binding of the one or more probes to the target molecule (page 24, first paragraph).

Regarding Claim 2. The biological sensor according to claim 1 wherein the central active layer has a porosity of about 50 to about 90 percent (Table 1, page 26).

Regarding Claim 3. The biological sensor according to claim 2 wherein the central active layer has a porosity of about 65 to about 85 percent (Table 1, page 26).

Regarding Claim 4. The biological sensor according to claim 1 wherein each of the upper and lower layers comprise six or more strata of alternating porosity (Fig. 3).

Regarding Claim 5. The biological sensor according to claim 1 wherein the strata of alternating porosity comprise first stratum having a porosity of about 35 to about 70 percent and second stratum having porosity greater than the porosity of the first stratum (Table 1, page 26).

Regarding Claim 6. The biological sensor according to claim 1 wherein the porous semiconductor structure comprises pores with an average pore size of between about 2 nm to about 2000 nm (page 26, last paragraph).

Regarding Claim 7. The biological sensor according to claim 1 wherein the porous semiconductor structure comprises pores with an average pore size of between about 10 nm to about 100 nm (page 26, last paragraph).

Regarding Claim 11. The biological sensor according to claim 1 wherein the probe is

Art Unit: 1634

a nucleic acid molecule (page 31).

Regarding Claim 12. The biological sensor according to claim 1 further comprising: one or more coupling agents each comprising a first moiety attached to the porous semiconductor structure and a second moiety which binds to the probe (page 31, third paragraph).

Regarding Claim 13. The biological sensor according to claim 12 wherein the one or more coupling agents are silanes (page 31, third paragraph).

Regarding Claim 14. The biological sensor according to claim 13 wherein the silane is of 3-glycidoxypropyltrialkoxysilane (page 31, third paragraph).

Regarding Claim 15. The biological sensor according to claim 12 wherein each of the one or more probes comprises a plurality of binding sites, at least one of which binds to the target and at least one of which is bonded to the second moiety of the coupling agent (page 31, third and fourth paragraphs).

Regarding Claim 16. The biological sensor according to claim 15 wherein the plurality of binding sites on the probe are the same, the biological sensor further comprising: a plurality of blocking agents, each bonded to the second moiety of the coupling agent under conditions effective to preclude all of the plurality of binding sites on a single probe from binding to the second moieties on the one or more coupling agents (page 31, second and third paragraphs).

Regarding Claim 18. The biological sensor according to claim 1 wherein the one or more probes are the same (i.e. 50 $\mu$  M DNA contains multiple copies of the probe, page 31, last paragraph).

Regarding Claim 19. The biological sensor according to claim 1 wherein the one or more probes are coupled to the porous semiconductor structure throughout the central layer and the upper and lower layers (page 31).

Regarding Claim 21. The biological sensor according to claim 19 wherein the porous

Art Unit: 1634

semiconductor structure includes at least two zones, one of the two or more probes being bonded to the porous semiconductor structure within a first zone and another of the two or more probes being bonded to the porous semiconductor structure within a second zone (i.e. the probes are bound to a different silane functional group and therefore to a different zone as claimed, page 31, second paragraph) .

Regarding Claim 34. A detection device comprising: a biological sensor according to claim 1, a source of illumination positioned to illuminate the biological sensor; and a detector positioned to capture photoluminescent emissions from the biological sensor and to detect changes in photoluminescent emissions from the biological sensor (page 27).

14. Claims 1-7, 9-16, 21 and 34 are rejected under 35 U.S.C. 102(a) or (b) as being anticipated by Chan et al (Materials Research Society Proceedings Symposium F. 2000, Vol. 638: f10.4.1-F10.4.6).

The following rejection is under 35 U.S.C. 102 (a) or (b) because the reference was supplied by Applicant in a Information Disclosure Statement with a date of 2000 but without the month of publication. Because publications prior to 02/21/2000 would be references under 102(b) and because the cited reference is not identified as being published after 02/21/2000, the claims are rejected under 102 (a) or (b) pending notification of month of publication.

Chan et al disclose the claimed sensor in the passages cited below.

Regarding Claim 1. A biological sensor comprising: a porous semiconductor structure comprising a central layer interposed between upper and lower layers, each of the upper and

Art Unit: 1634

lower layers including strata of alternating porosity; and one or more probes coupled to the porous semiconductor structure, the one or more probes binding to a target molecule, whereby a detectable change occurs in a refractive index of the biological sensor upon binding of the one or more probes to the target molecule (page F10.4.2).

Regarding Claim 2. The biological sensor according to claim 1 wherein the central active layer has a porosity of about 50 to about 90 percent (page F10.4.2).

Regarding Claim 3. The biological sensor according to claim 2 wherein the central active layer has a porosity of about 65 to about 85 percent (page F10.4.2).

Regarding Claim 4. The biological sensor according to claim 1 wherein each of the upper and lower layers comprise six or more strata of alternating porosity (page F10.4.2).

Regarding Claim 5. The biological sensor according to claim 1 wherein the strata of alternating porosity comprise first stratum having a porosity of about 35 to about 70 percent and second stratum having a porosity greater than the porosity of the first stratum (page 26 F10.4.2).

Regarding Claim 6. The biological sensor according to claim 1 wherein the porous semiconductor structure comprises pores with an average pore size of between about 2 nm to about 2000 nm (page F10.4.2).

Regarding Claim 7. The biological sensor according to claim 1 wherein the porous semiconductor structure comprises pores with an average pore size of between about 10 nm to about 100 nm (page F10.4.2).

Regarding Claim 9. The biological sensor according to claim 1 wherein the probe is a tetratryptophan ter-cyclopentane which binds to lipopolysaccharide (page F10.4.6).

Regarding Claim 10. The biological sensor according to claim 1 wherein the probe is a polypeptide selected from the group consisting of a receptor for cell surface ) molecule, a lipid A receptor, an antibody or fragment thereof, a peptide monobody, a lipopolysacchardide-binding polypeptide, a peptidoglycan-binding polypeptide, a

Art Unit: 1634

carbohydrate-binding polypeptide, a phosphate-binding polypeptide, a nucleic acid-binding polypeptide, and a polypeptide which binds an organic warfare agent (page F10.4.5).

Regarding Claim 11. The biological sensor according to claim 1 wherein the probe is a nucleic acid molecule (page F10.4.2).

Regarding Claim 12. The biological sensor according to claim 1 further comprising: one or more coupling agents each comprising a first moiety attached to the porous semiconductor structure and a second moiety which binds to the probe (page F10.4.2).

Regarding Claim 13. The biological sensor according to claim 12 wherein the one or more coupling agents are silanes (page F10.4.2).

Regarding Claim 14. The biological sensor according to claim 13 wherein the silane is of 3-glycidoxypentyltrialkoxysilane (page F10.4.2).

Regarding Claim 15. The biological sensor according to claim 12 wherein each of the one or more probes comprises a plurality of binding sites, at least one of which binds to the target and at least one of which is bonded to the second moiety of the coupling agent (page F10.4.2).

Regarding Claim 16. The biological sensor according to claim 15 wherein the plurality of binding sites on the probe are the same, the biological sensor further comprising: a plurality of blocking agents, each bonded to the second moiety of the coupling agent under conditions effective to preclude all of the plurality of binding sites on a single probe from binding to the second moieties on the one or more coupling agents (page F10.4.2).

Regarding Claim 18. The biological sensor according to claim 1 wherein the one or more probes are the same (page F10.4.2).

Regarding Claim 19. The biological sensor according to claim 1 wherein the one or more probes are coupled to the porous semiconductor structure throughout the central layer and the upper and lower layers (page F10.4.2).

Regarding Claim 21. The biological sensor according to claim 19 wherein the porous

Art Unit: 1634

semiconductor structure includes at least two zones, one of the two or more probes being bonded to the porous semiconductor structure within a first zone and another of the two or more probes being bonded to the porous semiconductor structure within a second zone (i.e. the probes are bound to a different silane functional group and therefore to a different zone as claimed, page F10.4.2) .

Regarding Claim 34. A detection device comprising: a biological sensor according to claim 1, a source of illumination positioned to illuminate the biological sensor; and a detector positioned to capture photoluminescent emissions from the biological sensor and to detect changes in photoluminescent emissions from the biological sensor (page F10.4.1).

15. Claims 1-7, 11-16, 18-19,21 and 34 are rejected under 35 U.S.C. 102(a) or (b) as being anticipated by Chan et al (Phys. Stat. Sol, 2000, 182: 541-546).

The following rejection is under 35 U.S.C. 102 (a) or (b) because the reference was supplied by Applicant in a Information Disclosure Statement with a date of 2000 but without the month of publication. Because publications prior to 02/21/2000 would be references under 102(b) and because the cited reference is not identified as being published after 02/21/2000, the claims are rejected under 102 (a) or (b) pending notification of month of publication.

Chan et al disclose the claimed sensor in the passages cited below.

Regarding Claim 1. A biological sensor comprising: a porous semiconductor structure comprising a central layer interposed between upper and lower layers, each of the upper and

Art Unit: 1634

lower layers including strata of alternating porosity; and one or more probes coupled to the porous semiconductor structure, the one or more probes binding to a target molecule, whereby a detectable change occurs in a refractive index of the biological sensor upon binding of the one or more probes to the target molecule (page 544, Fig. 2).

Regarding Claim 2. The biological sensor according to claim 1 wherein the central active layer has a porosity of about 50 to about 90 percent (page 544, Fig. 2).

Regarding Claim 3. The biological sensor according to claim 2 wherein the central active layer has a porosity of about 65 to about 85 percent (page 544, Fig. 2).

Regarding Claim 4. The biological sensor according to claim 1 wherein each of the upper and lower layers comprise six or more strata of alternating porosity (page 544, Fig. 2).

Regarding Claim 5. The biological sensor according to claim 1 wherein the strata of alternating porosity comprise first stratum having a porosity of about 35 to about 70 percent and second stratum having a porosity greater than the porosity of the first stratum (page 544, Fig. 2).

Regarding Claim 6. The biological sensor according to claim 1 wherein the porous semiconductor structure comprises pores with an average pore size of between about 2 nm to about 2000 nm (page 544, Fig. 2).

Regarding Claim 7. The biological sensor according to claim 1 wherein the porous semiconductor structure comprises pores with an average pore size of between about 10 nm to about 100 nm (page 544, Fig. 2).

Regarding Claim 11. The biological sensor according to claim 1 wherein the probe is a nucleic acid molecule (page 544, Fig. 2).

Regarding Claim 12. The biological sensor according to claim 1 further comprising: one or more coupling agents each comprising a first moiety attached to the porous semiconductor structure and a second moiety which binds to the probe (page 544, Fig. 2).

Regarding Claim 13. The biological sensor according to claim 12 wherein the one or

Art Unit: 1634

more coupling agents are silanes (page 543).

Regarding Claim 14. The biological sensor according to claim 13 wherein the silane is of 3-glycidoxypropyltrialkoxysilane (page F10.4.2).

Regarding Claim 15. The biological sensor according to claim 12 wherein each of the one or more probes comprises a plurality of binding sites, at least one of which binds to the target and at least one of which is bonded to the second moiety of the coupling agent (page 543-544).

Regarding Claim 16. The biological sensor according to claim 15 wherein the plurality of binding sites on the probe are the same, the biological sensor further comprising: a plurality of blocking agents, each bonded to the second moiety of the coupling agent under conditions effective to preclude all of the plurality of binding sites on a single probe from binding to the second moieties on the one or more coupling agents (page 543-4).

Regarding Claim 18. The biological sensor according to claim 1 wherein the one or more probes are the same (page 543-4).

Regarding Claim 19. The biological sensor according to claim 1 wherein the one or more probes are coupled to the porous semiconductor structure throughout the central layer and the upper and lower layers (page 543-4).

Regarding Claim 21. The biological sensor according to claim 19 wherein the porous semiconductor structure includes at least two zones, one of the two or more probes being bonded to the porous semiconductor structure within a first zone and another of the two or more probes being bonded to the porous semiconductor structure within a second zone (i.e. the probes are bound to a different silane functional group and therefore to a different zone as claimed, page 543-4) .

Regarding Claim 34. A detection device comprising: a biological sensor according to claim 1, a source of illumination positioned to illuminate the biological sensor; and a detector



Art Unit: 1634

positioned to capture photoluminescent emissions from the biological sensor and to detect changes in photoluminescent emissions from the biological sensor (page 541).


### **Conclusion**

16. No claim is allowed.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Benzion can be reached on (703) 308-1119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.



BJ Forman, Ph.D.  
Primary Examiner  
Art Unit: 1634  
August 6, 2003